

red-tailed hawks (*B. jamaicensis*), and great horned owls (*Bubo virginianus*). Great horned owls also nest in eucalyptus trees within the city of San Francisco (J.J. Keane pers. observ.).

This is the first confirmed nest record for Cooper's hawk in San Francisco, California. Observations of Cooper's hawks during the breeding season in other parts of San Francisco, particularly Golden Gate Park and the Presidio (Golden Gate National Recreation Area), suggest the presence of additional nesting pairs in the city. Given the widespread habitat modifications associated with a population growth rate of approximately 600,000 people per year in California (T. Palmer 1993, California's threatened environment, Island Press, Covelo, CA U.S.A.), further study of these Cooper's hawks could provide valuable information related to Cooper's hawk management and conservation.—Nadia Sureda, RR3 Box 17A, Vermillion, SD 57069 U.S.A. and John J. Keane, Department of Avian Sciences, University of California, Davis, CA 95616 U.S.A. Present address for Keane: Stanislaus National Forest, 19777 Greenley Road, Sonora, CA 95370 U.S.A.

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#### PRESENCE OF BREEDING NORTHERN GOSHAWKS IN THE COAST RANGE OF OREGON

Northern goshawks (*Accipiter gentilis*) nests have been found in all forested areas of Oregon except the Coast Ranges of the western portion of the state (R.T. Reynolds et al. 1982, *J. Wildl. Manage.* 46:124–138, T. Schommer and G. Silovsky 1994, USDA For. Ser. Status Rep. Pac. Northwest Reg. Off., Portland, OR U.S.A., and S. DeStefano et al. 1994, *Studies Avian Biol.* 16:88–91). Although goshawks have been observed in the Coast Ranges during the breeding season and at other times of the year (S. DeStefano unpubl. data), breeding activity has never been observed there.

On 7 and 20 June 1995, we observed two occupied northern goshawk nests in the Coast Ranges of Oregon (44°11'N, 123°36'W and 44°16'N, 123°26'W). A straight-line distance between the two nests was 16.1 km. The nests were discovered during surveys for northern spotted owls (*Strix occidentalis caurina*) in the Eugene Bureau of Land Management District, Oregon. Vegetation in this area is dominated by forests of Douglas-fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*).

Adult goshawks responded with "alarm calls" to our imitations of spotted owl calls during daytime surveys. We then played recorded goshawk calls to find the goshawks and their nests. Each goshawk nest was located within 150 m of an historic owl nest tree/activity area. We observed three young at the first nest and two young at the second. We estimated the first brood to be 9–12 d and the second brood at >40 d of age (C.W. Boal 1994, *Studies Avian Biol.* 16:32–40). Two of the three nestlings in the first brood eventually died of unknown causes. The first mortality occurred at 16–19 d of age and the second occurred when the nestling was 35 d old.

The dbh (diameter at breast height) of both Douglas-fir nest trees were smaller (33.5 and 33.0 cm) than those used by goshawks in other areas of Oregon (T. Schommer and G. Silovsky 1994, USDA For. Ser. Status Rep. Pac. Northwest Reg. Off., Portland, OR U.S.A.). One nest tree was alive and the other was a Class I snag (dead, but retaining its branches) (C.R. Maser et al. 1979, pages 78–93 in J.W. Thomas, Ed., USDA For. Ser. Agric. Handbook 553). However, nest height (8.1 and 20.9 m) was similar to nests located in other areas of Oregon (T. Schommer and G. Silovsky 1994, USDA For. Ser. Status Rep. Pac. Northwest Reg. Off., Portland, OR U.S.A.). Nests were constructed of sticks, lichens, moss and Douglas-fir needles, but were different shapes. The first nest was "cuplike" whereas the second nest was more "platform" in shape. The weathered appearance of both nests suggested that they were >1 year old. We located an alternate nest structure in the nest stand of the second nest, suggesting that the territory may not be ephemeral (B. Woodbridge and P.J. Detrich 1994, *Studies Avian Biol.* 16:83–87).

Nest stands were similar in both size (11 and 16 ha) and structure. Forest fires and selective timber harvest occurred in the nest stands 50–60 yr ago, accounting for the smaller trees (28–52.9 cm dbh) in the stands and a component of large overstory trees (53+ cm dbh) in the stands. These "young" stands also contained an open understory, residual components of down woody debris and snags.

The Coast Ranges of Oregon appear to have all of the structural types of habitat with which breeding goshawks are associated (R.T. Reynolds et al. 1982, *J. Wildl. Manage.* 46:124–138). Despite a decade of annual surveys for spotted owls and other forest breeding birds, the relative absence of breeding goshawks in the Coast Ranges is well-documented. It is not clear why goshawks breed at such low densities in the Coast Ranges when compared to other areas of the Pacific Northwest.

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#### PREDATION ON A BALD EAGLE NESTLING BY A RED-TAILED HAWK

No incidents where a raptor has taken a bald eagle (*Haliaeetus leucocephalus*) nestling from a nest while the adult eagle was present have been reported. We observed an adult red-tailed hawk (*Buteo jamaicensis*) remove a bald eagle nestling from a nest on Santa Catalina Island, California on 2 April 1996. The incident occurred while we were monitoring the eagle nest from about 300 m through a spotting scope as part of a study of nesting behavior in a reintroduced population of bald eagles impacted by DDE contamination.

Since 1989, bald eagle nests on Santa Catalina Island have had eggs with high DDE levels replaced with artificial eggs, and later healthy chicks have been reintroduced back into the nests. On 30 March 1996, we fostered 9- and 11-day-old nestlings into the nest where the predation occurred. On 2 April, the female eagle was observed on the nest in brooding posture. One of the introduced nestlings was obscured from view, probably sheltered by the female, while the other nestling was lying in front, approximately 25 cm away from the mother eagle. At 1018 H, a mature red-tailed hawk flew in and grabbed the nestling in front of the female. As the hawk took the nestling, the adult eagle vocalized and flapped its wings. Immediately, the female eagle flew from the nest chasing after the hawk. Less than a minute later, the female eagle returned to the nest with the nestling in its talons, placed it on the edge of the nest, and began brooding the other nestling that had been left unattended. The nestling removed by the red-tailed hawk did not move after it was returned, presumably killed either by the hawk or during its recovery by the eagle.

At 1022 H, the red-tailed hawk again tried to take the dead nestling, but it was unsuccessful. The male eagle was not seen in the vicinity of the nest until 1057 H, when it flew within 100 m of the nest over ½ h later. From 1103–1111 H, the female eagle fed the dead nestling to its nest mate and consumed part of the carcass herself.

We have monitored incubation and chick-rearing behavior of adult eagles on Santa Catalina Island at 14 nests since 1989. This is the only instance of predation on a nestling eagle that we have observed. However, in areas that red-tailed hawks and bald eagles commonly cohabitate, predation by red-tailed hawks may be a more frequent cause of mortality for nestling eagles.

We would like to thank the Santa Catalina Island Conservancy for their support and permission to conduct this study on their property. Funding for the project was provided by the Natural Resource Damage Assessment Branch, U.S. Fish and Wildlife Service.—**Dustin W. Perkins, Dave M. Phillips and David K. Garcelon, Institute for Wildlife Studies, P.O. Box 1104, Arcata, CA 95518 U.S.A.**